

NOTES ON AUSTRALIAN PAPILIONIDAE.

(Part i.)

Papilio aegeus, Donovan. Descriptions of a new female form and two aberrations.

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Plate xi.

In this series of notes, I hope from time to time to give some interesting facts about these large and handsome butterflies. The popular name of "Swallowtails" was applied to them over a century ago, owing to the only species found in Europe having tail-like projections to the hindwings. Many of them, however, are without tails. They are more plentiful in the tropics, but extend to the temperate regions of Australia, one even being found in Tasmania. Like most Australian butterflies, they are more common within 50 miles of the sea coast, only one occurring commonly inland.

Papilio aegeus is one of the most interesting butterflies of the Australian region. It is found in varying geographical races throughout New Guinea and the adjacent islands, such as the Bismarks, Aru, Key, Banda, Mysol, Salawatti and Waigeu, and also in Eastern Australia. In the Southern Moluccas it is represented by a very closely allied species, *Papilio gambrius*.

The sexes are dissimilar, and in many parts of the range of the species two or more female forms are found. Six different female forms from New Guinea have received names. The usual female is the one that is so well known in Eastern Australia, and a form similar to this is found wherever the species occurs, accompanied in some localities by one or more other females, which vary in the direction of being almost white above, or in the other direction of having the forewing above entirely dark brown.

The New Guinea race is known as *P. aegeus ormenus*. All the specimens I have seen from Darnley and Murray Islands show the characters of *ormenus*, rather than of typical *aegeus* from Sydney. From Banks Island and the islands adjacent to Cape York, though the specimens are not quite typical *aegeus*, they belong to that race rather than to *ormenus*. Amongst other characters, the female of typical *aegeus* can be recognised by the extension of the central white area of the hindwing below towards the costa as a white bar between veins 7 and 8. This white bar varies in width, usually being much wider in the south than in the north.

In the Victorian Naturalist, Vol. xxv., p. 118, 1908, I described the white female form of *Papilio aegeus* from Cape York and Prince of Wales Island. Only twelve specimens of this form, which I called *beatrice*, are known. Additional localities are Thursday Island and Ingham, Herbert River (one specimen). I now give the description of a much rarer female from within the limits of Australia, which corresponds to the form *timoxena* of *P. aegeus ormenus*.

PAPILIO AEGEUS, female form TULLIA, NOV.

Female: Length of costa of forewing about 70 mm.

Upperside: Forewing brown-black, with a band of 5 irregular creamy-white spots between veins 4 and 10, bordering the outer end of cell. Hindwing dark brown-black, with a large central creamy-white area between veins 1a and 7; this crosses the outer end of cell and extends half-way towards termen; it is followed by a series of blue scalings, more developed in spaces 2 and 3, and a subterminal row of 7 prominent red lunules. Cilia of both wings cream, broadly interrupted at terminations of veins.

Underside: Forewing dull black; spots white; a broad spot near end of cell and a series of spots between veins 1a and 10, those between 4 and 10 much longer than above. Hindwing black; central white area more restricted basally than above, not crossing end of cell and extended as a thin white line between veins 7 and 8; blue scalings more developed than above, subterminal lunules orange red.

One female from Moa (Banks Island) in Australian Museum, Sydney, from J. W. Schomberg.

This specimen differs from the five ordinary females from Banks Island in the Australian Museum in the absence of the large pale spot near end of cell in forewing above; by the presence of the five distinct spots of forewing above; by the less pure white colour of the central area of hindwing above; by the smaller white spots of forewing below; by the central white area of hindwing below not entering end of cell.

From Darnley and Murray Islands I have two females of the corresponding form (*timoxena*) of *P. aegaeus ormenus*. Both are without the spot in cell of forewing below and the white bar between veins 7 and 8 on hindwing below. On the hindwing both have less blue scalings above and below and the subterminal spots are much paler.

This brings the number of female forms of typical *Papilio aegaeus* to three. The ordinary female which occurs over the whole range and the only one found from Townsville south; the *beatrice* from Cape York, Prince of Wales and Thursday Islands, and one from near Ingham; and *tullia*, one specimen from Banks Island.

Mosaic hermaphrodites.

Two very interesting mosaic hermaphrodites are known. In examining these specimens it should be noted that both the dark and light scales of the sexes can be easily recognised. The dark scales of the male are black and easily distinguished from the brown-black scales of the female. In the female the pale scales are pure white, but in the male dull white.

The first specimen (plate xi., fig. 1, upperside; fig. 2, underside) belongs to the typical race *P. aegaeus*.

Left side, above and below, wholly male. Right side, hindwing above and below, wholly female.

Right side: Forewing; upperside chiefly female; black male scales as follows: Two longitudinal streaks in lower half of cell, below cell and vein 4 numerous streaks and patches, above vein 4, female except in space 5, which has several patches of black and of white male scales. Underside

chiefly female; black male scales as follows: One longitudinal streak near lower edge of cell, patches between dorsum and vein 4, but not so extensive as above. Above vein 5 to costa female. Space 5 has male scales above but none below. Space 4 has no male scales above, but patch below close to the cell.

This specimen is in the National Museum, Melbourne, and is from Queensland, Mr. Pilchard's collection, December, 1882.

The second specimen (plate xi., fig. 3, upperside; fig. 4, underside) belongs to *P. aegeus ormenus*, and is a much more complex specimen than the first.

Right side: Forewing above, male except some dull brown-black female scales between end of cell and termen and a small patch near anal angle. Below male with female scales in cell and irregularly between cell and termen and dorsum.

Right side: Hindwing above, upper half female above a line from base along middle of cell and vein 5, below this line male with a few female scales scattered over the wing and two red female subterminal spots. Below all female.

Left side: Forewing above chiefly male, most of cell female excepting a central longitudinal male streak; mostly female from end of cell to apex. Below almost as above.

Left side: Hindwing as right side, but no female scales in lower male half. Below upper half female, lower half male with a few female scales.

This specimen is in the Australian Museum, Sydney, from Darnley Island, 23rd June, 1910, caught by H. Elgner.

In this specimen the differences in colour between the scales of the sexes is well shown in the large central white patch of the hindwings above.

EXPLANATION OF PLATE XI.

Fig. 1, upperside; fig. 2, underside of mosaic hermaphrodite of *P. aegeus* from Queensland.

Fig. 3, upperside; fig. 4, underside of mosaic hermaphrodite of *P. aegeus ormenus* from Darnley Island.

All figures about two-thirds natural size.